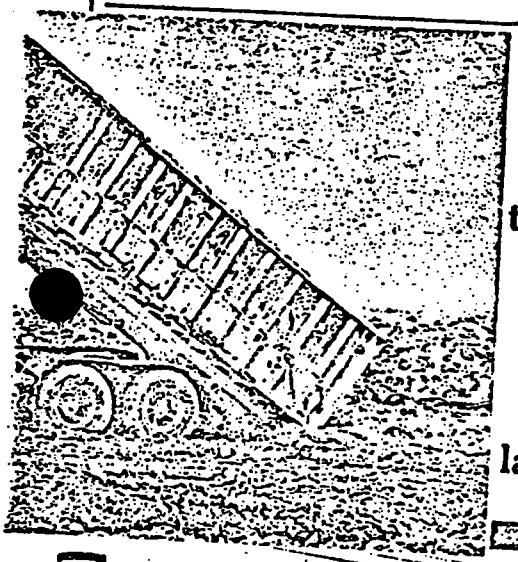
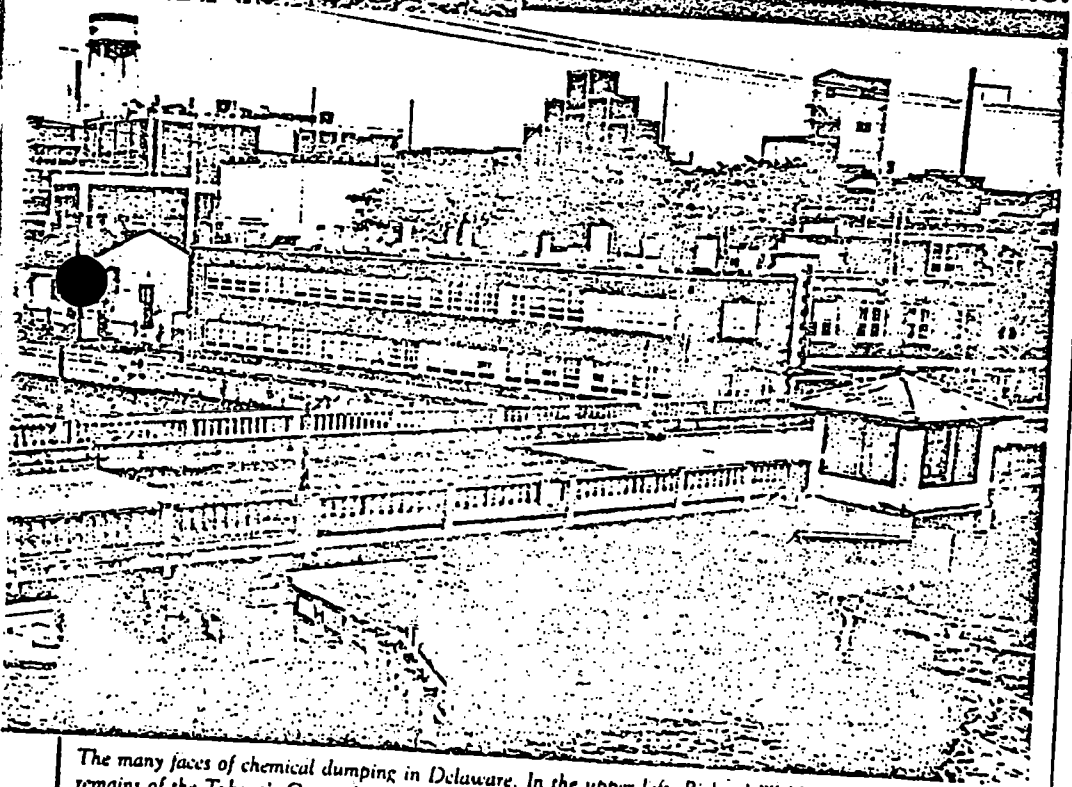
SEE PPs. 22 + 44-45

SLOW DEATH FROM THE POISON WASTELAND

Robert Stowe England



Chemical wastes from landfills are poisoning Delaware's water. Its effects threaten people throughout the state. In the first of a two-part series, Delaware Today explores the hazardous wastes, including nuclear material, which have been dumped here by many of the largest chemical companies in the state.



The many faces of chemical dumping in Delaware. In the upper left, Richard Weldon surveys the remains of the Tybout's Corner landfill which he correctly predicted would ravage the surrounding land after it was established in 1969. On the upper left, a truck dumps an unknown sludge at the Pigeon Point landfill which is managed by New Castle County Director of Public Works Albert W. Maulora (lower left). On the bottom right is Du Pont's Newport Pigments Plant where radioactive materials, deadly pesticides and other dangerous chemicals were dumped. Outlining the photos is chemical-infested leachate oozing from the Tybout's Corner landfill into Pigeon Run Creek.

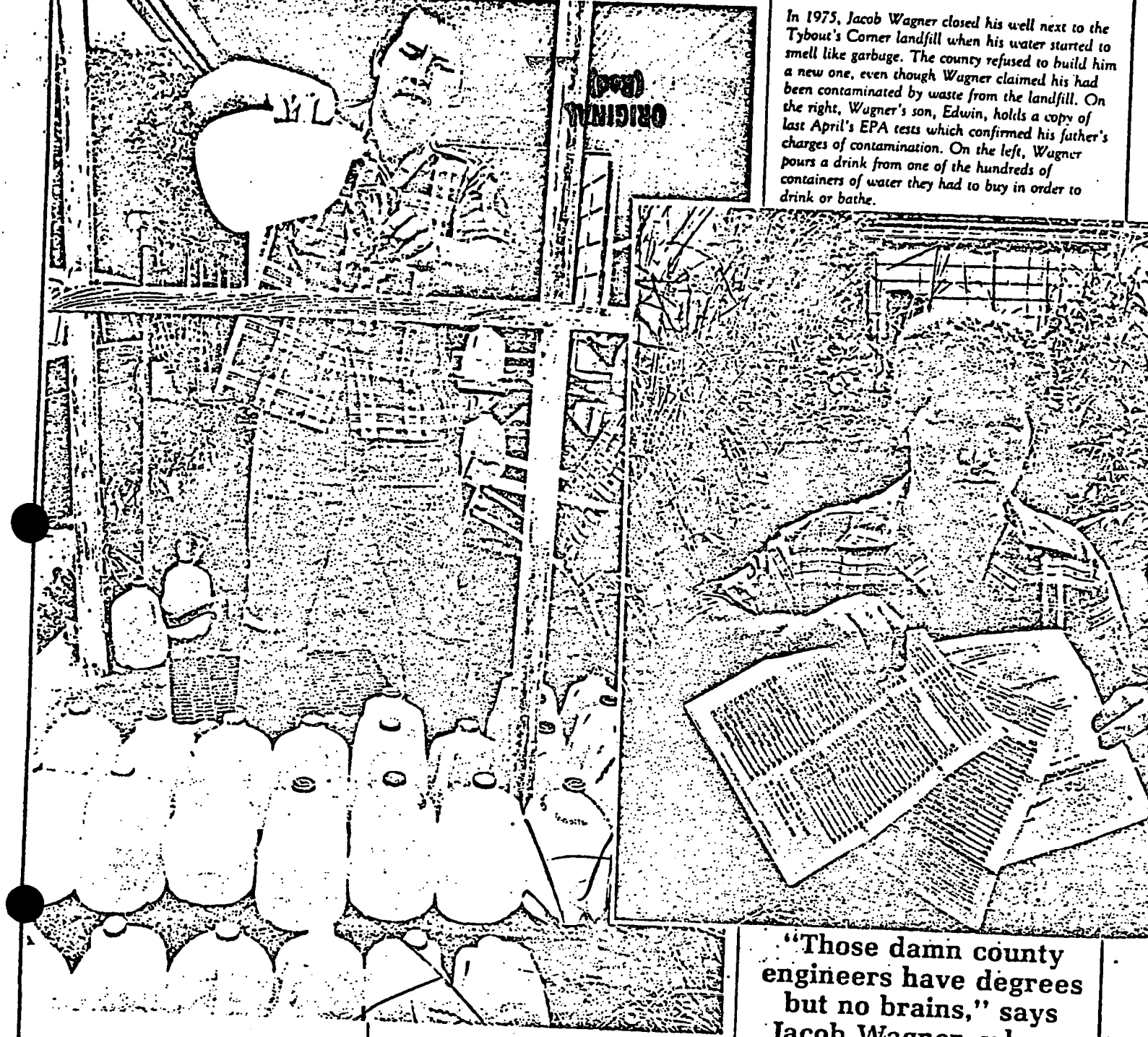
ORIGINAL (Red)

The land by Jacob Wagner's house is arid, scarred, plagued by a chemical stream which slithers along the edge of his property and empties into Pigeon Run Creek. The water has been contaminated by deadly wastes dumped into the Tybout's Corner landfill next to his house, during the years 1968 to 1971. The liquid flows like technicolor lava mixed with scum from the fetid landfill, accompanied by a thick black ooze that fills the tributaries surrounding the landfill and drains into the creek.

Wagner's front porch is lined with plastic milk bottles containing water he brought from a distant well. Rain water from his roof drains into barrels which collect the water so he can flush his toilets. He has a private well in his backyard but he stopped using it in 1975 when his water "turned brown and smelled like garbage." Wagner suspected his well had been poisoned by chemical wastes seeping from the landfill. However, state and county officials pooh-poohed his claim until EPA tests of monitoring wells last April confirmed that much of the water around Tybout's Corner contains dangerous levels of toxic contamination.

Today, Wagner is being treated for lymphatic cancer at Johns Hopkins Hospital in Baltimore. Even as he speaks of the rancid landfill that haunts his life, hair falls from his head as he runs his fingers through it.

Photography by Keith Meyers



In 1975, Jacob Wagner closed his well next to the Tybout's Corner landfill when his water started to smell like garbuge. The county refused to build him a new one, even though Wagner claimed his had been contaminated by waste from the landfill. On the right, Wagner's son, Edwin, holds a copy of last April's EPA tests which confirmed his father's charges of contamination. On the left, Wagner pours a drink from one of the hundreds of containers of water they had to buy in order to drink or bathe.

"Those damn county engineers have degrees but no brains," he says. "Nine or ten years ago, I told them that landfill would pollute the water in the wells. They swore up and down that it would never happen. Now look at it."

Look at it indeed. The abandoned dump, closed by the state in 1971, is a barren plain of 100 acres or so just south of Red Lion Road by Route 13. Near the entrance, an old sign lies on the ground, facing the sun. It reads, "New Castle County Sanitary Landfill." Nearby, a giant conveyor stand is rusting.

The legacy left at Tybout's Corner includes a great deal more than the conveyor stand. Darker, more sinister elements from those years remain. These elements threaten the people who now live in those rural homes along Tybout's Corner.

Last month, the Environmental Protection Agency's (EPA) Region III office in Philadelphia confirmed that testing of monitoring wells in Tybout's Corner revealed dangerous levels of toxic contamination. In findings released to us, the EPA confirmed that toxic contamination had reached the ground water,

"Those damn county engineers have degrees but no brains," says Jacob Wagner, whose well was contaminated in 1975 and who now suffers from cancer. "Nine or ten years ago, I told them that the Tybout's Corner landfill would pollute the water in the wells. They swore up and down it would never happen. Now look at it."

WHAT HAVE THEY DONE TO OUR WATER?

Delaware was blessed with a bountiful geological formation bearing water in a broad sweep of land along a line connecting Wilmington and Newark and most of the area north of there. This enormous aquifer provides the drinking water for about 500,000 people. Water is pumped from the aquifer by a number of separate water companies, including Wilmington, Newport, the suburban water companies and the Artesian Water Company. The aquifer is so vital to the state that when, in 1972, tests confirmed that the Llangollen landfill had contaminated it and the pollution had advanced to within a mile of a cluster of production wells, most people in the state were outraged.

They still have reason to be outraged.

The eight wells in the Llangollen section of the aquifer were capable of producing 5 to 7 million gallons a day in 1972, but production had to be curtailed in order to contain the flow of contaminants toward the wells, according to the chief engineer for the Artesian Water Company, B. T. Lakhsman. The state, in a joint effort with the county, had a number of interception wells installed to halt the flow of the contamination southward.

"It was a close call," recalls N.C. Vasuki, former head of the Department of Natural Resources and Environmental Control.

The Artesian Water Company had to curtail its production to 2 million gallons a day, where it has remained since 1973. The interception wells, on the other hand, pump out millions of gallons of water a day, a holding action that has itself complicated other problems for the Potomac aquifer.

According to Michael Abgar, a geohydrologist who works for the state, the excess production of the interception wells added to a shrinking trend in the aquifer which has lowered the water table across much of northern New Castle County. The strain of the many production wells has also altered the natural flow pattern of the aquifer, Abgar notes, usually making the water flow toward the wells rather than in ways that gravity and hydrostatic laws dictate.

So the danger of widespread contamination of our water supply continues. In fact, there is evidence that the altering of the flow of the water along with the lowering of the water table have made the possibility of our drinking water being poisoned more real than it has ever been.

The changing of the pattern of water flow may be one reason why the Llangollen contamination flowed so quickly to the production wells. It was drawn there by the exit of such high volumes of water. While New Castle County has yet to take action to curtail or eliminate the source of the contamination, the existing system remains a tentative solution. The County Council proposal to dig up the landfill, line the bottom and put all the garbage and industrial waste back into the ground is a classic case of applying a Band-Aid to a wound demanding radical surgery. The seal lining the landfill could soon break and we'd be back to the original problem which threatens the area's water supply.

Meanwhile, tests by the EPA of wells near the plant landfill at Du Pont's Newport Pigments plant, have confirmed contamination of the Potomac aquifer at points adjacent to the landfill. The contamination has probably been delayed because when the water table was higher, contamination flowed from the aquifer into the Christiana River. While this was hardly a benefit for the river, it protected the ground water. Since partial depletion of the water has lowered the water table since about 1950, the contamination of the aquifer beneath the landfill may now flow north to Newport's production wells or even south to Artesian Water Company wells at the airport.

Abgar states that the depletion action of the wells may draw the contaminants at the Newport plant site into the drinking water of the residents of Newport. The landfill is loaded with potential hazards, including radioactive wastes, deadly concentrations of pesticides and heavy metals and a host of organic compounds that EPA considers inimical to human health. With one leg of the aquifer table weakened, the Potomac can ill afford another blow. Should the county have to install interceptor wells at Newport, it would only further draw down water levels, pulling contaminated sections to other production wells and endangering half a million people's drinking water.

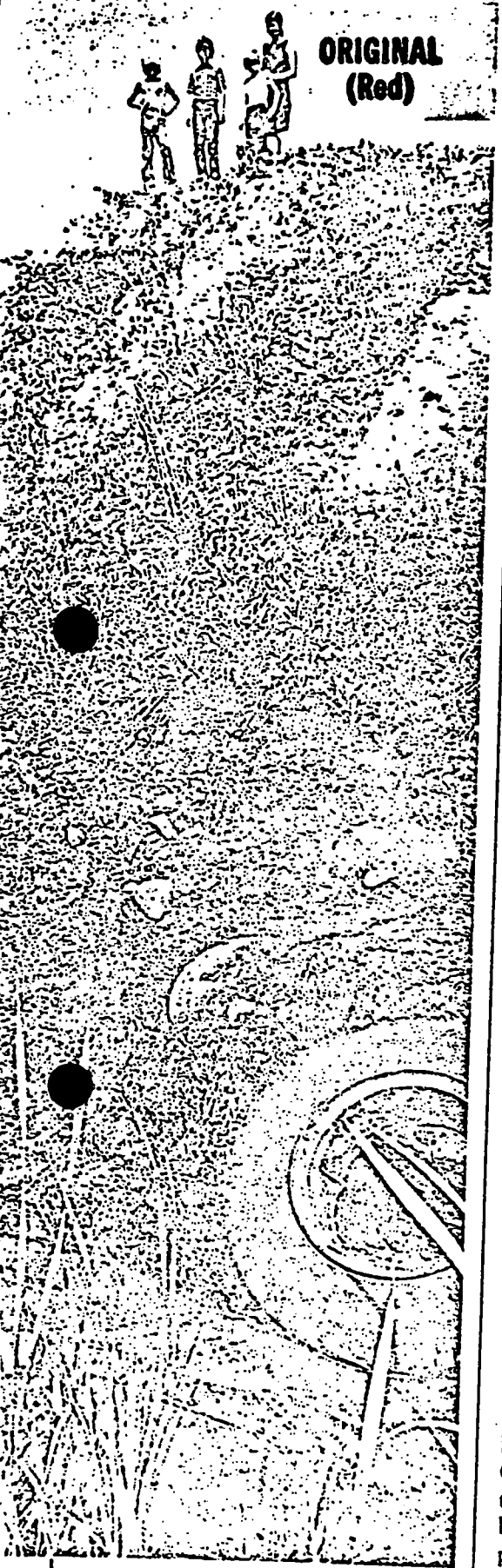
travelled several hundred yards eastward to poison Wagner's well and poured as leachate from the landfill into Pigeon Run Creek.

The poisoning of the Tybout's Corner site is but a strand in a labyrinth of widespread contamination of landfills in the state. It is one of six sites where the EPA has already documented evidence of dangerous wastes (see "The EPA Verdict" side story). Furthermore, there are at least 32 known sites of chemical dumping in the state. Most have yet to be tested by a reliable party. Over the past two months, Delaware Today has investigated the dumping of deadly wastes in the state. What we found is a large-scale threat caused by the disposal of dangerous chemicals, including radioactive material, in landfills in Delaware. Many of these chemicals are linked to high incidence of cancer, birth defects, chromosome damage and growth abnormalities.

Unlike many of the diseases of the past, the health hazard posed by these chemicals rarely evidences itself in the short run. Rather, like the most insidious of insects, they suck the life blood slowly and invisibly. It may be years before the complete story on the effects of this dumping is understood.

The clearest danger is ground water pollution. The state's soil is highly porous and sandy. Contaminants are quickly absorbed into the ground water and pollute it. Once the ground water is poisoned, the contamination can travel underground to wells used for drinking water. Delaware is almost totally reliant on underground wells for its drinking water. The Potomac Aquifer which runs from Newark to Wilmington (see side story "What Have They Done To Our Water?"), provides the drinking water for half a million Delawareans. Deadly wastes threaten its survival. As if this danger was not enough, the EPA estimates Delaware generates 440,000 tons of hazardous wastes a year.

Tybout's Corner came to public light as a possible dumping site for hazardous waste when it was included on a list of potentially dangerous sites published by U.S. Rep. Robert Eckhardt, after the House Oversight and Investigations



Mary Neilson lives near the Tybout's Corner landfill. Her private well was contaminated within six months of the time it was drilled. Above, she and her children examine the thick slimy liquid which drains from the abandoned landfill.

erators of chemical wastes in the United States. Information compiled in that survey, but not previously available to the public, shows that at least 16,000 tons of industrial chemicals were dumped into the Tybout's Corner public landfill. Polluters include the Du Pont Company, the Stauffer Chemical Company and the FMC Corporation. Samples taken from test wells near the Tybout's Corner landfill contained dangerous levels of two organic compounds suspected of causing chromosome damage, deformities, birth defects and cancer—even when exposure is minimal. The two chemicals—tetrachloroethylene and trichloroethylene—are present in concentrations higher than those EPA suggests as acceptable.

High levels of other suspected carcinogens (cancer-inducing agents) were found in the test wells as well as Jacob Wagner's well. His water contained dangerous levels of the toxin barium. The potential for harm to the residents of Tybout's is obvious, though the process of contamination is slow and the direction of the flow of contaminated ground water can not be reliably predicted because many of the state's aquifers have altered their natural flow.

Visits to most of the residents prior to the EPA's confirmation of chemical contamination revealed a surprisingly low level of apprehension.

"No, my well's fine," said Charlie Fritz, who at 73 finally retired from running the small Arco station near the entrance to the landfill. "In fact," he adds, "that landfill has been good for me. I made a lot of money when it was in operation, filling up the tanks of the haulers who used to drop by here."

"It's awful," disagrees his wife, Julia, a partial cripple who spoke through the screen door. "At night in the summer, the odors from the landfill are unbearable," she said. "The smell was so bad one night, it woke me up and I could hardly breathe." She prefers to remember when the landfill was a sawmill. Or, even earlier, when it was a farm.

Jacob Wagner and Richard Weldon have other memories of the Tybout's Corner landfill. Weldon helped form the Red Lion Civic Association in 1968 because he feared that the open gravel pit on Red Lion Road would become the new county dump after the Llangollen landfill had been closed by the state Board of Health in 1965.

After completing a thorough study of the underlying aquifer, Weldon went to state and county officials to try to block the landfill for environmental reasons. The Department of Natural Resources and Environmental Control assured him the landfill posed no threat to the environment. They promised to monitor and close it if any ground water contamination occurred. Monitoring test wells and leachate from the landfill became a county responsibility, but even that was contracted out to the University of Delaware. When the landfill closed after only three years (even though it was projected to be able to serve county needs for eight), the monitoring stopped. While it has not been confirmed, it is believed the state learned of contamination of wells near the landfill in 1971 and this prompted the closing.

Alarmed that no one was keeping an eye on the potential health hazard to the community, Weldon went back to the state and county to see why the monitoring had stopped just because the landfill was closed. The county told him it was not responsible for "clean water," Weldon says. The state environmental department claimed the state could act only after contamination was confirmed. (It may have already been confirmed at that time, although no one close to the monitoring is willing to admit it. Even after Wagner's well was contaminated in 1975, the state did not step in as it had promised. Instead it refused to seek verification of the contamination. Not until the EPA came to test Wagner's well this April did the nine-year struggle to get the state to concede failure conclude.)

"We found it to be a real merry-go-round trying to get someone in government to accept responsibility for the landfill," Weldon recalls. But, even Weldon, knowledgeable in soil conservation, failed to see the potential hazard in chemical dumping. Like many others, he assumed that such dumping would never be allowed by the state.

"It's a disgusting problem," he says in retrospect.

Neighbors Wallace and Mary Neilson agree. They drilled a well within a few hundred feet of the landfill in 1970 before it closed. After only six months, they were the first in the community to have their drinking water contaminated. "It gave us stomach aches and cramps," Mrs. Neilson recalls. They had to resort to bottled water until they moved and drilled a new well upstream from the landfill the following year.

ORIGINAL
(Red)

The EPA Version

DUPONT NUKED NEWPORT

The Environmental Protection Agency's Region III Office in Philadelphia supervised tests of the water at seven Delaware sites earlier this year. While the state environmental office and even the owners of some industrial sites have known about the results, EPA had chosen to keep its new confirmations of groundwater poisoning quiet. The purpose, according to the Region III spokeswoman, was to prevent information publicized prior to a court action from prejudicing the case. Under provisions of the Freedom of Information Act, Delaware Today was able to obtain the results of the tests.

At all sites tested, significant and often unacceptable levels of a wide variety of contaminants reached test wells and sometimes private wells. The most alarming results, in terms of concentrations of dangerous chemicals, were found at two test wells adjacent to and southwest of a 50-year-old landfill near the Christiana River in Newport, part of Du Pont's Newport Pigments plant. The EPA confirmed that radioactive wastes, deadly levels of pesticides and unacceptable levels of the heavy metals cadmium and barium were present there. In addition, bothersome organic compounds suspected of causing cancer, birth defects and chromosome damage were found in a test well near Tybout's Corner landfill. Unacceptable arsenic, chromium and lead levels were found in test wells at Du Pont's Cherry Island landfill in Wilmington. A suspected potent carcinogen (cancer-inducing agent) was found near sludge pits in test wells at Stauffer Chemical Company's polyvinyl chloride plant near Delaware City. Two Cokers's landfills in Cheswold, used to dump chemicals from Reichhold Chemical Company, contained fewer contaminants but did have worrisome levels of some suspected carcinogens.

While discovery of radioactive wastes, buried long ago at Du Pont-Newport, has raised a lot of eyebrows, the level of radiation confirmed by EPA tests is not above the allowable limits set by EPA's Office of Drinking Water. The concentration at the test well nearest the landfill, however, is "within striking distance" of breaking the norm, particularly for someone who drinks excessive amounts of water or is exposed to carcinogens in heavy concentrations at work or regularly through the environment (for instance, by smoking). Du Pont, who replied to our inquiries in writing, issued the following explanation for the radiation:

"The source of the radiation is thorium, which was a key component of the nickel alloy which we manufactured for the aerospace industry between 1961 and 1968. The manufacturing process was operated under an Atomic Energy Commission's license and the waste material from the process was disposed of in accordance with appropriate Federal regulations," the statement claimed.

"The material has little radioactive potential, and we foresee no hazard," Du Pont's statement continues. "Disposal practices insure the thorium is suitably shielded and periodic monitoring of the surrounding area has confirmed this."

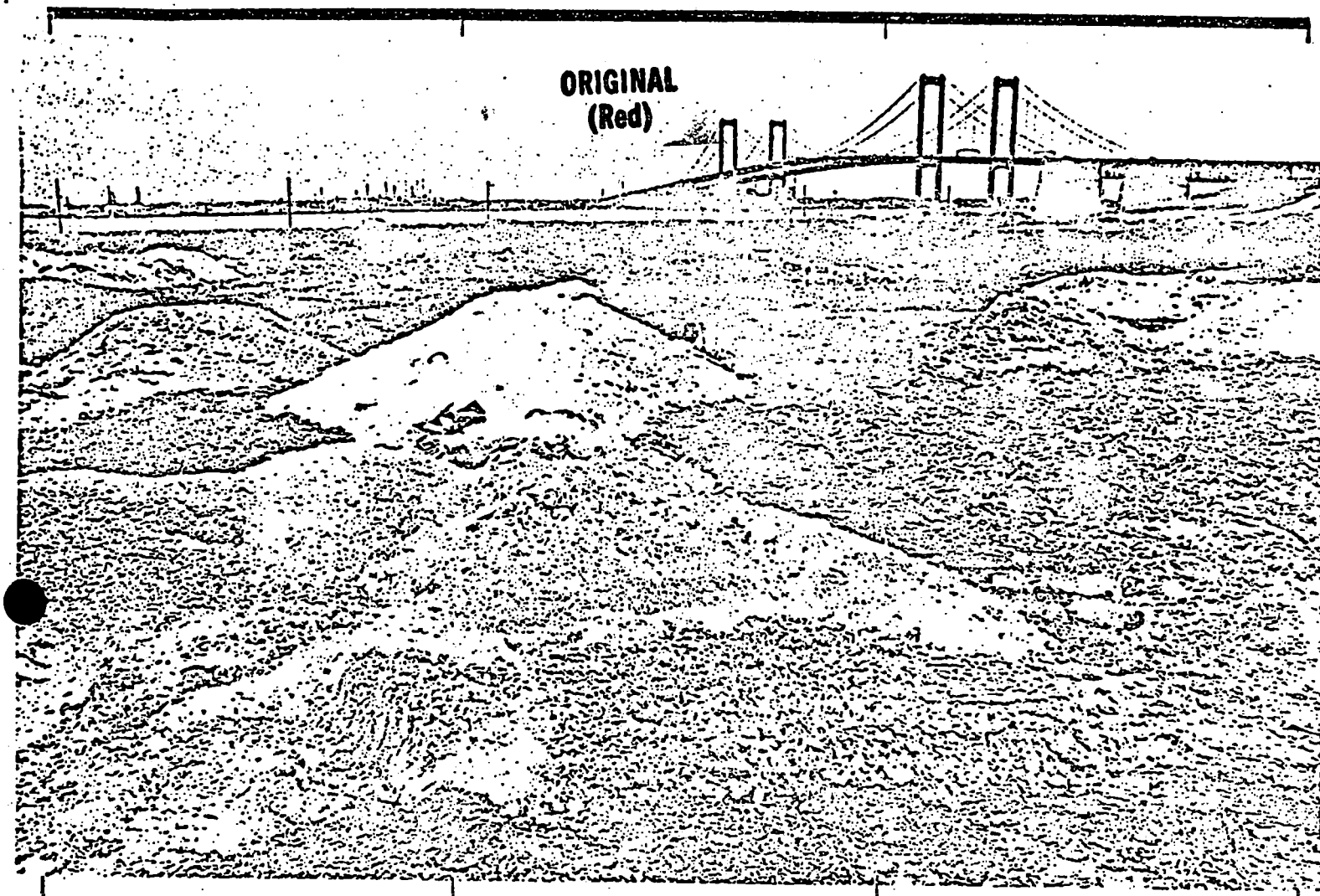
The claim of "no hazard" is a Du Pont wish, but not a reality. A spokesman from EPA's Office of Drinking Water points out that being "acceptable" under the standard and having "no risk" are not synonymous terms. There is always some risk attached to the radioactivity.

Of more immediate and verifiable hazard at Newport are the concentrations of cadmium found in the test well nearest the landfill. While the national drinking water standard is 10 micrograms per liter, the amounts measured at the test well were 3,900 micrograms per liter, 390 times the acceptable level. The level of barium at the same well was slightly beyond the acceptable level of 1,000 micrograms per liter. Cadmium, like other heavy metals is bioaccumulative. That is, it is not eliminated from the body but accumulates in it over a long time. Cadmium accumulates in the kidneys, usually, but may accumulate elsewhere. Cigarettes contain cadmium, placing smokers at greater risk to cadmium accumulation. Excessive quantities of cadmium are believed to cause renal-arterial hypertension, etai etai (Japanese for ouch-ouch), decalcification of the bones and prolonurea glycosurea.

While standards for only a handful of organics have been established, the Office of Drinking Water expects to issue several proposed standards this fall. Among those will be a number of pesticides not yet rated. There is little doubt that such concentrations as that for endosulfan sulfate, found at the Newport landfill test site in concentrations of 28,180 micrograms per liter, will be far above any acceptable drinking standard. The concentrations of heptachlor from the same sample, at 610 micrograms per liter, will also likely prove unacceptable.

At Tybout's Corner, the barium concentration at a private well was double the acceptable level. The concentrations of two worrisome compounds—tetrachloroethylene and trichlotoethylene—were also above the expected danger level to be proposed by the Office of Drinking Water. These compounds are suspected carcinogens and may cause deformities in unborn children or chromosome damage.

Disturbing concentrations of 1, 2-dichloroethane were found in test wells near sludge pits at Stauffer's PVC plant, as well as in one well near the Tybout's Corner landfill. The compound, a volatile organic, is a known carcinogen. A number of other volatiles, including vinyl chloride, methylene chloride and others were found in high concentrations at Stauffers and at Tybout's Corner's landfill test wells. Similar compounds were found in smaller concentrations in test wells at Cokers landfills. ●



Chemicals are dumped in haphazard piles and left unattended at the Pigeon Point landfill where they mix together, drain into the Delaware and filter into the air.

The lesson of the Llangollen landfill, repeated at Tybout's, is a rather simple one: Once a hole is dug into the earth and that hole is deemed a public landfill, people will dump any and everything into it. The chemical companies who have long discarded hazardous and non-hazardous wastes into the landfills on their property, were the unintended beneficiaries of Delaware's public dumps. Their rationalization was obvious: they were Big Taxpayers, the cost of private landfills was high, and they had as much right as anyone else to discard unwanted wastes. Every segment of society came forward to cast off unwanted items, all oblivious to one simple but little known fact: that ground water, once poisoned, can take an indefinite time to purify itself. It might take ten years and it might take a thousand.

Says Mrs. Weldon, who has shared her husband's concern about the landfill: "It's so frustrating to try and try to prevent it and then to fail. It's not the American way. Or worse, maybe it is."

During one interval of 15 minutes, I counted trucks from five different Delaware chemical plants dumping their wastes at Pigeon Point. Some of the bags containing the chemicals burst open. My eyes and skin burned for 24 hours and I felt nauseous.

Perhaps no one is as disillusioned by the shabby treatment from governmental officials as Wagner. He intends to sue the county once he finishes his cancer treatment. "Every agency in government approved that landfill," Wagner states. New Castle County has failed to provide Wagner with either additional water services, a replacement well or financial compensation for his losses.

The contamination of the aquifer underneath the landfill is still in its early stages, having taken only a few years to spread to nearby wells. The worst is yet to come. On a recent visit into the landfill, I discovered trucks hauling dirt out of the landfill. A resident living in a section overlooking it claims that the dirt is being taken from sections that were sites of dumping. Under state regulations, such removal of land is expressly forbidden without a state permit. William Ward, the owner of the Tybout's landfill, refused to return phone calls or answer questions about

landfills. Whoever is buying Ward's dirt might be well advised to consider that their purchase may be full of dangerous chemical wastes.

ORIGINAL (Red)

Tybout's Corner is New Castle County's second major failure at managing landfills. The current landfill at Pigeon Point has also suffered from abuse. In operation since 1971, Pigeon Point has been subjected to a host of state and federal regulations including a law aimed at controlling solid wastes in 1974, the Toxic Substances Control Act (1975) and the Resource Conservation and Recovery Act, or RCRA (1976). Under RCRA, the EPA has proposed strict new regulations to control hazardous wastes from the moment they are generated to the point they are safely disposed of as wastes. This cradle-to-grave system is expected to go into effect as early as November, slapping controls on the generators of 97 percent of all hazardous waste.

But the EPA has taken far too long in proposing these regulations. Because the task of regulating the life cycles of hazardous wastes is so immense and the task of identifying what is or is not hazardous is so "fraught with scientific uncertainty," as EPA puts it, the traffic in hazardous wastes continues somewhat unchecked. It is controlled only by the Toxic Substances Control Act and mitigated by the National Pollution Discharge Emission System (NPDES) permits controlling some industrial wastes.

The filthy business of landfilling has barely improved at all in New Castle County. Since very few people ever see what happens at a landfill, it is to some extent enlightening yet disturbing to make such a visit. While the county's Director of Public Works, Albert W. Madora, was not receptive to inquiries about hazardous wastes and the landfill operations, the workers at the Point, carrying on a longstanding grudge with Madora, have been very willing to expose suspected irregularities in hazardous waste dumping at the site. (Madora was once one of the subjects of a county and state investigation of alleged financial misdealings. Although the case was dropped by Deputy Attorney General Joseph J. Farnan, a leaked report of the investigation pointed to questionable financial deals and contract arrangements by Madora.)

Pigeon Point workers were willing to provide me with an unofficial tour of the landfill, where we discussed the ad-

"This is supposed to be the landfill where the ground up remains of Jimmy Hoffa are buried," one county employee at Pigeon Point reported, only half-jokingly.

ventures of landfilling, although all preferred to remain anonymous to prevent possible retribution from Madora.

Pigeon Point, once flat land, now rises as one enormous mountain of dirt, sludge, trash, drums and assorted garbage on the north side of the twin span of the Delaware Memorial Bridge. In the daytime, thousands of sea gulls of a white and pinkish variety, forage among its mounds of food, even as the workers bulldoze around them. At night, however, when the gulls rest, thousands of cat-sized rats roam the land to plunder for food, digging into the soil cover to expose the trash. Wild dogs and pheasants have been known to call the landfill home, to say nothing of flies and other insects. The dangers these animals and pests pose are numerous, for there is considerable evidence that the land is fraught with dangerous chemicals. The animals offer a way for infectious diseases, poisons, carcinogens and other dangerous organic compounds to enter the food chain.

About 375,000 tons of solid waste and 25,000 tons of sewage sludge are generated by New Castle County each year and trucked to the site. Sludge from the sewage treatment plant, spread out over land to help in the destruction of bacteria by exposure to sun and air, is brought in with the farm soil and used in the landfill. This is not considered a sanitary or safe way to dispose of wastes, particularly since the dried sludge/soil mixture is highly porous and encourages leaching from rains. A more impervious clay soil is required as cover to retard leaching. Layer upon layer of trash is used at Pigeon Point to build higher and higher plateaus without sufficient layers of soil/sludge between them, as required by state regulations. Licenses are granted to haulers and those with permits can bring in just about anything, the workers report, although Madora insists all new or suspicious substances are tested before they are allowed in.

Punitive actions against the haulers, who have strong loyalty to Madora, are rare. According to workers at the landfill, when they complained to Madora about hazardous chemicals being brought into the dump, he replied, "I thought I told them to water that stuff down before they came here so it wouldn't be hazardous."

Trash Haulers, one of the permitted haulers, brings in sludge from Stauffer Chemical Company's polyvinyl chloride plant near Delaware City. Occasionally, troughs of sludge have come in, workers say, with warning tags that say "Vinyl Chloride," a known carcinogen. EPA tests of wells near pits of polyvinyl chloride cast-offs and other sludges showed dangerous concentrations of 1, 2-dichloroethane, a substance that the EPA proposes to ban from all emissions into ambient waters.

Last August, a quantity of asbestos (a notorious carcinogen), labeled hazardous, arrived in a Trash Hauler's truck from Stauffer's. The union workers went to the president of Local 459, Joe Begatto, to complain and he, in turn, went to Public Works Director Madora. The director dismissed the matter as unimportant, according to Begatto.

"If you think you can do any better, then have your men watch the gates," Madora allegedly told him. However, Begatto's men do not know how to identify hazardous from non-hazardous wastes, so they can not police the gates for violations.

Stauffer Chemical Company, for its part, does not deny that a shipment of asbestos was sent on that date. A company spokesman from the corporate headquarters in Westport, Connecticut, claims a contractor for Stauffer hired to remove piping insulation mistakenly threw the asbestos into the wrong trash container and the hauler carried it off by mistake to Pigeon Point. That doesn't speak too well for the contractor, who apparently was too preoccupied to notice the hazardous label. The fact that a container, clearly labeled as hazardous, could pass so easily through the gates illustrates how lax

continued on page 44

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enforcement against licensed haulers is at Pigeon Point.

Trash Haulers also brings in sludge from Standard Chlorine's Delaware City plant, where an intermediate industrial substance for pesticides and fungicides is manufactured. The end-product, called chlorinated benzenes, is one of the basic building blocks of the now-banned DDT, as well as other pesticides still sold. It is considered hazardous and toxic. A representative from Standard Chlorine insists that no residue of the chlorinated benzenes remain in the sludge from the treatment plant and maintains the sludge dumped at Pigeon is totally harmless. However, many chemists believe that a sludge can never be totally free of elements either recovered or recycled. Should machinery be faulty or operational problems plague the plant, the sludge can have very high levels of chlorinated benzenes in some of its shipments.

Since no one checks every truckload, a hauler could actually substitute a plant's hazardous wastes for those considered only moderately hazardous, and no one at the landfill would be the wiser.

Other problems haunt Pigeon Point as well. For instance, there have been more than a few mysterious fires there. Flammable hazardous wastes in Delaware are virtually unregulated at this time. Currently, ICI Americas' Atlas Point Plant, only a stone's throw away from the landfill, ships drums of filter cake, a waste that is filtered out in the process of purifying certain pharmaceuticals and cosmetics. The filter cakes are volatile, meaning they convert from solid to gas at rather low temperatures and are easily ignited by a careless spark. They may also release toxic gases when they vaporize. Workers at the landfill report that the ICI Americas drums are so hot when they come in that they can not immediately handle them. If they do, they explode or catch fire, so they leave them standing and vaporizing for a few days before handling them. ICI claims only one truckload of the filter cake per week is sent to Pigeon Point. The workers dispute this. They state that sometimes 20 loads of drums a day come in from Atlas Point.

Naturally, summer heat increases the fire risk. Those ignitables with flash points of less than 100° are almost certain to catch fire. On June 25, during the preparation of this article, one of the landfill's more spectacular fires occurred. The workers blame the fire partially on drums brought from the Chrysler assembly plant in Newark allegedly containing paint residues or other flammable materials. The workers report that a blaze started when a bulldozer backfired late in the morning and set fire to some of the trash near the drums, which had just been brought in. One of the drums had been punctured slightly while unloading and when the fire reached the punctured drum, the workers say, it caused a huge explosion that set all the drums on fire. The operator of the bulldozer barely escaped the explosion, which set fire to and destroyed the bulldozer. The blaze raged across a wide section of the landfill. Workers were busy for more than 12 hours, from 11:30 a.m. to midnight, covering the fire with dirt to extinguish it.

The EPA believes the potential mixing of the many chemical wastes during a fire poses a separate hazard because potentially dangerous com-

although none are encouraging.

According to the EPA, landfills which accept chemical wastes should line the areas where industrial wastes are dumped so that chemicals from different companies cannot mix. No lining is done at Pigeon Point. Sludges from companies including Stauffer's PVC plant and Standard Chlorine's plant are poured together on the edge of the landfill "mountain" nearest the river, where heavy rains can wash them straight down into the river.

Private citizens, even without licenses, can enter the landfill especially at night and deposit anything. A worker who used to man the scales reports that he has seen everything from dead horses to blood-soaked hospital bed sheets come into the dump.

"This is supposed to be the landfill where the ground up remains of Jimmy Hoffa are buried," one county employee reports, only half jokingly. Indeed, the normal confines of law and justice seem to end at the edge of the landfill.

During one interval of about 30 minutes while standing in the area where licensed haulers were bringing in loads of industrial wastes, I counted trucks from five different Delaware chemical plants dumping their wastes. Some of the plastic bags containing chemicals burst as their haulers tilted the load to pour it, sending a cloud of white dust into the air. The wind blew the dust toward me and some of the workers. The resin-like dust caused my eyes and exposed skin to burn and continue to burn for the following 24 hours, during which I also felt nauseous. While hazardous wastes are bagged in plastic to prevent their escape into the air at the time of dumping, more often than not the bagged wastes break open anyway. The precaution of bagging them seems like an idle exercise in self-deception.

Regulations say that no hazardous wastes can be dumped in the landfill without the approval of the State Department of Natural Resources and Environmental Control. While all other solid waste disposal is licensed by the landfill, this "marshmallow regulation" leaves a lot of loopholes for companies, allowing them to do just about what they want. Only those substances so identified in the Toxic Substances Act, like PCB's (polychlorinated biphenyls), are expressly forbidden.

After a series of incidents in which materials marked hazardous came into

gathered eight samples and took them to Joe Begatto. He agreed to try to have them analyzed to see what they were and to determine if they were hazardous. Begatto says he called the University of Delaware and a local testing firm in Wilmington to get estimates. Somehow, Madora heard about Begatto's investigation and called him. "Why didn't you give me a chance to help you?" Madora asked the union president, Begatto claims.

"How could I refuse the offer?" Begatto states. "The union couldn't afford the cost of the tests."

Madora's subsequent actions suggest that he was more interested in thwarting the investigation than in helping it along. As part of his "investigation" of the samples, Madora issued a number of memos. The first memo, according to a copy obtained by Delaware Today Magazine, was directed to landfill supervisor Ray Trout, one of Madora's associates investigated along with the public works director. The memo to Trout, dated November 9, 1979, says that two of the eight samples the workers claimed were asbestos were actually, fiberglass. On November 28, 1979, a second memo to Trout claimed he consulted Duffield Associates to determine what the remaining six samples were.

Duffield Associates, geotechnical engineers, did not perform a chemical analysis. However, Duffield did investigate the origin of the wastes but rather foolishly relied on the dumpers of the material—the very companies doing the polluting—to identify the sample materials, hardly the way to conduct a definitive investigation.

For what it's worth, Duffield identified two of the samples as Sorbitol, a sugar substitute used in chewing gum and manufactured by ICI Americas. A third material was identified as "probably PVC's" (polyvinyl chlorides). Another substance was simply identified as "backwash from screens in a dust collector system" and finally, a sludge was called "leachate" from the landfill. Furthermore, Madora said, the leachate was harmless. The memo admits three of the substances are not thoroughly identified but states there seems to be no reason to continue the investigation. No reason was given for assuming the unidentified substances were harmless.

Blanket statements seem to be Madora's forte. During an interview with him, he was not at all reluctant to

fill the air with them. "There are no hazardous wastes in New Castle County," he said definitively. "In fact, there are none in the whole state of Delaware."

If not, what is that stuff the EPA has been finding in wells all over New Castle County?

Amazingly, Madora is not alone in making the claim that there are no wastes in the state. His statement echoes those made by Thomas Eichler, Director of the State Department of Natural Resources and Environmental Control. Last fall, Eichler defended the state's record after the Eckhardt survey revealed that 37 sites in Delaware were suspected of containing hazardous wastes. Eichler insisted there were no hazardous wastes buried in Delaware at that time. His statement may have stemmed from claims made by Ken Weiss, of the State's hazardous wastes branch. Weiss believes that all the hazardous wastes generated in Delaware are shipped out to secure landfills, most of them in upstate New York. Weiss, however, feels that only 40,000 tons of hazardous wastes are generated a year, out of a total industrial waste generation of 400,000. He claims the remaining 90 percent are neutralized and treated in on-site facilities and disposed of in a safe manner. EPA believes that the volume of hazardous wastes handled properly is closer to 10 percent.

"There are no midnight dumpers here," Weiss claims. "No Love Canals among the sites on the Eckhardt list."

However, State regulations define hazard in a manner that EPA reserves for *extremely hazardous*. The state defines "hazardous" as posing an "imminent" danger. The very nature of ground pollution and ground water poisoning are such that the danger is slow and not "imminent" until it is too late to correct it. The definition is thus self-canceling and meaningless. The state's ability to allow "special wastes" at landfills, does not require permits for hazardous wastes nor does it mandate a periodic review.

The state has traditionally been bound by a lack of legislative initiative, kept in tow by influential leaders in the chemical industry. Finally, perhaps belatedly, Gov. Pierre S. duPont IV seized some initiative and pressed the General Assembly to adopt the strict new federal standards that will allow for more adequate control over the progress of hazardous wastes.

It's about time. ●

This is the first of a two-part series.